IN THE CLAIMS

We Claim:

1. (Currently amended) An apparatus comprising:

a strap including a first substrate with an embedded integrated circuit, the integrated circuit having a conductive pad, the integrated circuit being embedded in an opening provided in the first substrate;

a thin-film planarization dielectric layer having a thickness less than 10 microns and being patterned with at least two vias, the thin-film planarization dielectric layer formed directly over a portion of the integrated circuit and a portion of the first substrate; and

a conductive medium, covering at least a portion of the integrated circuit and a portion of the first substrate extending beyond edges of the integrated circuit, formed directly over the thin-film dielectric layer and attached to the conductive pad through at least one of the vias~~via a contact hole~~, the conductive medium having a greater surface area than the conductive pad and is a conductive paste containing silver and wherein the conductive medium fills the at least two vias and wherein the conductive medium contacts the conductive pad through the at least one of the vias; and

a large-scale component attached to the conductive medium, the large scale component electrically coupled to the integrated circuit through the at least one of the vias, the large scale component including a second substrate, and the second substrate being larger than the first substrate.

2. (Previously Presented) The apparatus of claim 1, wherein the large-scale component includes an antenna on the second substrate, the antenna electrically coupled to the integrated circuit directly through the conductive medium.

3. (Canceled).

4. (Withdrawn) The apparatus of claim 1, wherein the conductive medium is electrically conductive tape.

5. (Previously Presented) The apparatus of claim 2, wherein the integrated circuit is a microstructure IC containing circuitry suitable for radio frequency applications.

6. (Original) The apparatus of claim 5, wherein the large-scale component is a substrate having thereon an antenna, the antenna electrically coupled to the integrated circuit directly through the conductive medium.

7. (Original) The apparatus of claim 1, wherein the integrated circuit is a circuit suitable for use with radio frequency applications.

8. (Original) The apparatus of claim 7, wherein the large-scale component is a substrate having thereon an antenna, the antenna electrically coupled to the integrated circuit directly through the conductive medium.

9. (Original) The apparatus of claim 1, wherein the integrated circuit includes a circuit suitable to control an electronic display.

10. (Withdrawn) The apparatus of claim 9, wherein the large-scale component is a substrate including thereon a display electrode, the display electrode electrically coupled to the integrated circuit directly through the conductive medium.

11. (Withdrawn) The apparatus of claim 9, wherein the large-scale component is a substrate including thereon a display electrode connected to a conductor, the conductor connected to the conductive medium, thereby electrically coupling the display electrode to the integrated circuit.

12. (Withdrawn) The apparatus of claim 11, wherein the display electrode is printed on the first substrate.

13. (Withdrawn) The apparatus of claim 1, wherein the large-scale component is a substrate including therein a sensor, the sensor electrically coupled to the integrated circuit directly through the conductive medium.

14. (Withdrawn) The apparatus of claim 1, wherein the large-scale component is a power source, the power source electrically coupled to the integrated circuit directly through the conductive medium.

15. (Withdrawn) The apparatus of claim 14, wherein the power source is a substrate including a battery, the battery electrically coupled to the integrated circuit directly through the conductive medium.

16. (Withdrawn) The apparatus of claim 15, wherein the battery is a button cell embedded within the large-scale component substrate.

17. (Withdrawn) The apparatus of claim 15, wherein the battery is a thick film cell printed on the large-scale component substrate.

18. (Withdrawn) The apparatus of claim 1, wherein the large-scale component is a substrate having thereon a logic device, the logic device electrically coupled to the integrated circuit directly through the conductive medium.

19. (Withdrawn) The apparatus of claim 1, wherein the conductive medium is metal particles suspended in a carrier.

20. (Withdrawn) The apparatus of claim 1, wherein the conductive medium is a conductive polymer.

21. (Withdrawn) The apparatus of claim 1, wherein the conductive medium is a carbon-based conductor.

22. (Previously Presented) The apparatus of claim 1, wherein the one or both of the first and second substrates are made of a flexible material.

23-36. (Canceled)

37. (Currently amended) An apparatus comprising:

an integrated circuit embedded within a substrate;

a thin-film planarization dielectric layer having a thickness of less than 10 microns and being patterned with at least two vias, the thin-film planarization dielectric layer formed directly over a portion of the integrated circuit and a portion of the substrate;

a conductive medium, covering at least a portion of the integrated circuit and a portion of the first substrate extending beyond edges of the integrated circuit, formed directly over a portion of the thin-film dielectric layer, the conductive medium having direct electrical connection with the integrated circuit through at least one of the vias, wherein the conductive medium is conductive paste containing silver and wherein the conductive medium fills the at least two vias and wherein the conductive medium contacts the integrated circuit through the at least one of the vias; and

a large-scale component connected to the conductive medium, the large scale component electrically coupled to the integrated circuit through the at least one of the vias, and the large scale component including a second substrate.

38. (Previously Presented) The apparatus of claim 37, wherein one or both of the substrates are made of a flexible material.

39. (Withdrawn) The apparatus of claim 37, wherein the conductive medium is a solder.

40. (Original) The apparatus of claim 37, further comprising:
a large-scale component connected to the conductive medium, the large-scale component electrically coupled to the integrated circuit.

41. (Canceled).

42. (Withdrawn) The apparatus of claim 40, wherein the conductive medium is silver ink.

43. (Withdrawn) The apparatus of claim 40, wherein the conductive medium is tape.

44. (Withdrawn) The apparatus of claim 40, wherein the conductive medium is metal particles suspended in a carrier.

45. (Withdrawn) The apparatus of claim 40, wherein the conductive medium is a conductive polymer.

46. (Withdrawn) The apparatus of claim 40, wherein the conductive medium is solder.

47. (Withdrawn) The apparatus of claim 40, wherein the conductive medium is a carbon-based conductor.

48. (Original) The apparatus of claim 40 wherein the large-scale component is an antenna.

49. (Withdrawn) The apparatus of claim 40 wherein the large-scale component is a power source.

50. (Withdrawn) The apparatus of claim 49 wherein the large-scale component is a battery.

51. (Withdrawn) The apparatus of claim 49 wherein the large-scale component is a thick film cell printed on a large-scale component substrate.

52. (Withdrawn) The apparatus of claim 49 wherein the large-scale component is a button cell.

53. (Withdrawn) The apparatus of claim 40 wherein the large-scale component is a sensor.

54. (Withdrawn) The apparatus of claim 40 wherein the large-scale component is a logic device.

55. (Withdrawn) The apparatus of claim 40 wherein the large-scale component is a display electrode.

56. (Previously Presented) The apparatus of claim 37, wherein the integrated circuit is a microstructure containing circuitry suitable for radio frequency applications.

57. (Original) The apparatus of claim 37, wherein the integrated circuit is a display driver.

58. (Original) The apparatus of claim 37, wherein the integrated circuit is a radio-frequency identification circuit.

59. (Original) The apparatus of claim 37 wherein the integrated circuit is a circuit suitable for use with radio frequency applications.

60. (Original) The apparatus of claim 40 wherein the large-scale component is a substrate having thereon an antenna, the antenna electrically coupled to the integrated circuit directly through the conductive medium.

61-98. (Canceled)

99. (Withdrawn) The apparatus of claim 20 wherein the conductive polymer is a thermosetting polymer with conductive filler.

100. (Withdrawn) The apparatus of claim 20 wherein the conductive polymer is a thermoplastic with conductive filler.

101. (Withdrawn) The apparatus of claim 45 wherein the conductive polymer is a thermosetting polymer with conductive filler.

102. (Withdrawn) The apparatus of claim 45 wherein the conductive polymer is a thermoplastic with conductive filler.

103-104. (Canceled)

105. (Previously Presented) The apparatus of claim 1 wherein the opening is tapered.

106. (Previously Presented) The apparatus of claim 1 wherein the conductive medium has a thickness of 1 micron or less.

107. (Previously Presented) The apparatus of claim 1 wherein the film dielectric layer comprises silicon dioxide.

108. (Withdrawn) A spool comprising a plurality of straps for radio frequency identification (RF-ID) tags, each strap comprising:

a substrate with an embedded integrated circuit, the integrated circuit having a conductive pad, the integrated circuit being embedded in an opening;

a dielectric layer formed over a portion of the integrated circuit and a portion of the substrate;

a contact hole formed in the dielectric layer; and

a conductive medium formed over a portion of the dielectric layer and attached to the conductive pad via the contact hole, the conductive medium being greater in surface area than the conductive pad.

109. (Withdrawn) The spool of claim 108, wherein the opening is tapered.

110. (Withdrawn) The spool of claim 108, wherein a gap is disposed between columns of the plurality of straps.

111. (Currently amended) An apparatus comprising:

a strap including a first substrate with an integrated circuit, the integrated circuit having a conductive pad;

a thin-film planarization dielectric layer having a thickness of less than 10 microns and being patterned with at least two vias, the thin-film planarization dielectric layer formed directly over a portion of the integrated circuit and a portion of the substrate;

a conductive medium, covering at least a portion of the integrated circuit and a portion of the first substrate extending beyond edges of the integrated circuit, formed directly over the thin-film dielectric layer and attached to the conductive pad through at least one of the vias~~via a contact hole~~, the conductive medium having a greater surface area than the conductive pad, wherein the conductive medium is a conductive paste containing silver and wherein the conductive medium fills the at least two vias and wherein the

conductive medium contacts the conductive pad through the at least one of the vias; and

a large-scale component attached to the conductive medium, the large scale component electrically coupled to the integrated circuit through the at least one of the vias, the large scale component including a second substrate.

112. (Previously presented) An apparatus as in claim 1, wherein the thin-film planarization dielectric layer extends beyond the edges of the integrated circuit.

113. (Previously presented) An apparatus as in claim 37, wherein the thin-film planarization dielectric layer extends beyond the edges of the integrated circuit.

114. (Previously presented) An apparatus as in claim 111, wherein the thin-film planarization dielectric layer extends beyond the edges of the integrated circuit.